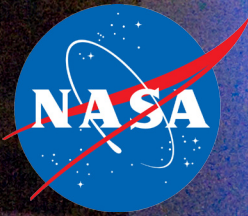


National Aeronautics and Space Administration



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Looking Back on *Hubble's* Incredibly Successful Year

By Susan Hendrix

No one could have predicted the enormous impact that the *Hubble Space Telescope* has had on modern day astronomy, for what began as a seemingly doomed mission turned into a hugely successful adventure.

Since the first servicing mission in 1993, *Hubble* has continually rewritten text books with science discoveries that have stunned and elated astronomers around the world. For nearly 20 years it has been an icon that represents the true triumph of human spirit.

NASA's highly successful Shuttle servicing mission in May 2009 may go down in the history books as one of the most difficult and suspenseful missions ever. The five televised space walks kept us at the edge of our seats and left us with a sense of great accomplishment. With the servicing mission and instrument checkouts completed, astronomers hunger for observing time on the telescope.

According to Ray Villard at the Space Telescope Science Institute in Baltimore, Md., science proposals continue to pour in and *Hubble* still boasts an over-subscription rate of about 7:1. That's a staggering one proposal accepted for every seven received.

With two new science instruments and a host of refurbishments, *Hubble* is now at the apex of its capabilities, ready to solve even more mysteries the universe has been keeping secret for billions of years.

Hubble wouldn't have become the most recognized telescope in history without the tireless efforts and never say die attitude of the hundreds of engineers and technicians, many of whom devoted their entire career to *Hubble*. It is their expertise and out-of-the-box thinking that not only saved *Hubble* from being space scrap, but turned it into a magnificent finely tuned spacecraft. No wonder self proclaimed "*Hubble* Hugger" and astronaut John Grunsfeld felt like he was seeing an old friend for the last time. *Hubble* has this sort of affect on people.

Astronomers are hopeful that *Hubble* will still be conducting science observations when its follow-on, the *James Webb Space Telescope*, which will peer even farther back in time, launches in 2014. Working in tandem, *Hubble* and *Webb* could offer up the mother lode of all discoveries. Stay tuned! ■



Photo credit: NASA

Caption: The Hubble Space Telescope high above Earth.

GoddardView

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Cover caption: Goddard Ambassador Colleen Quinn-House watches as a visitor tries to pick up coins with an astronaut glove.

Photo credit: Bill Hrybyk

GoddardView Info

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Goddard Visitor Center Fills Up for *Hubble* Lecture

By John Putman

The Goddard Visitor Center hosted a one-of-a-kind event on January 13 featuring expert *Hubble* scientist Dr. David Leckrone. Over 140 guests filled the Visitor Center auditorium and a satellite viewing area to see and hear about the *Hubble Space Telescope's* journey of discovery.

Dr. Leckrone recounted his experiences as Senior Scientist for the *Hubble Space Telescope* for more than two decades. He delved into the roller-coaster ride that was Servicing Mission 4—the last Shuttle servicing mission to the famed telescope. He also showcased some of the stunning images recently taken with *Hubble's* newly installed and repaired instruments.



Caption: Scientist David Leckrone showcases some of Hubble's glorious new images.

Leckrone's hour-long lecture riveted the audience with dazzling images and insightful comments. The lecture was followed by a question and answer session. The event served as a NASA Goddard Finale to the International Year of Astronomy.



Caption: Scientist David Leckrone takes questions from Visitor Center audience.



Caption: Visitor Center guests crowd the main gallery to see ongoing exhibits and the evening's special Hubble displays.

The International Year of Astronomy 2009 was a global effort initiated by the International Astronomical Union and the United Nations to help citizens of the world rediscover their place in the universe through the day- and night-time sky, and thereby engage a personal sense of wonder and discovery.

Before and after Dr. Leckrone's presentation, guests had the opportunity to enjoy the captivating visual experience of *Science on a Sphere*. On display in the main gallery were many items used to help astronauts work on *Hubble*. Justin Cassidy, lead EVA Crew Aids and Tools designer, was on hand to describe some of the tools used to improve and repair the *Hubble Space Telescope*. Visitors also got the chance to use astronaut gloves to examine and operate tools from *Hubble* Servicing Mission 4.



Caption: Justin Cassidy, lead EVA Crew Aids and Tools designer for Servicing Mission 4 to Hubble, describes some of the tools used to improve the Hubble Space Telescope.

The Leckrone *Hubble* event is the first in what will become a series of lectures at Goddard's Visitor Center. For more information about the Visitor Center, please visit:

<http://www.nasa.gov/centers/goddard/visitor/home/index.html>. ■

Goddard's Primary R&D Program Followed an Upward Trajectory

By Lori Keesey

In 2009, Goddard's Internal Research and Development (IRAD) program—the Center's chief venue for funding advanced technologies for future missions—followed an unmistakable upward-moving trajectory, said Chief Technologist Peter Hughes.

"The primary purpose of the IRAD program is to assure the Center's competitive edge and to win new work in areas deemed strategically important to Goddard," said Hughes, who manages the IRAD program and oversees the Center's technology development efforts. "Our investment program uses many metrics to gauge success—winning new missions and follow-on R&D funding, validating technologies in space and aircraft demonstrations, and formulating important new missions. 2009 proved to be an exceptional year, based on these metrics."

In 2009, for example, NASA selected an IRAD-funded team to build the \$105 million Gravity and Extreme Magnetism SMEX (GEMS) mission, a Small Explorer that will deliver never-before-obtained measurements of how fast black holes spin and how their spin rates affect the curvature of space-time. The team's selection capped a multi-year effort that included significant investments in the development of the world's first time-project chamber polarimeter needed to gather the measurements.

NASA also selected the Origins Spectral Interpretation Resource Identification Security Explorer mission, known as OSIRIS-REx, as one of three candidates for the Agency's next-generation venture to another celestial body. The team—many of whom received IRAD funding in the past to advance instruments and techniques to study organic compounds—received \$3.3 million to conduct a 12-month mission concept study. If selected, the mission will be the first to return a pristine sample of a carbonaceous asteroid for detailed analyses at the Goddard Astrobiology Analytical Laboratory and other facilities.

And still other IRAD-funded principal investigators secured millions of dollars in follow-on funding from various NASA research programs to further advance their technologies. These technologies ran the gamut from new instruments that would test the theories of cosmic inflation to those that would measure different processes in Earth's upper atmosphere and the effects of solar activity.

"Although it is heartening to see the upward trend in new funding, financial success is not our only measure of accomplishment," Hughes said.

In 2009, Goddard technologists and scientists demonstrated their technologies on actual spaceflight missions or prepared instruments for flights in the future. One such demonstration, carried out during the *Hubble* Servicing Mission, proved that spacecraft could operate in close proximity with little or no human intervention—an important capability for future science and exploration efforts. During the same mission, Goddard technologists for the first time demonstrated new GPS receivers that can operate in low-signal areas.

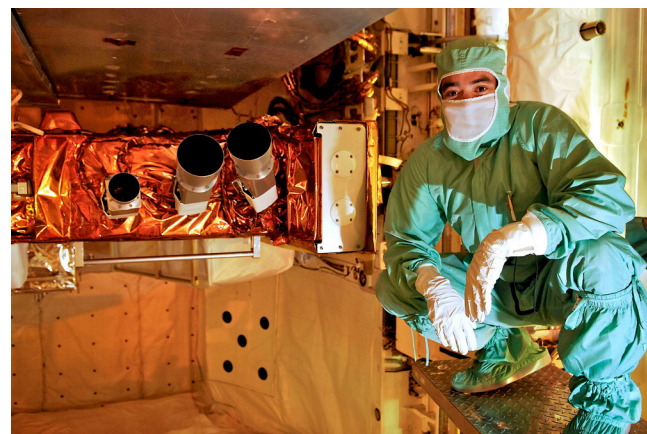


Photo credit: Chris Gunn

Caption: In 2009, Goddard engineer Bo Naasz successfully demonstrated the Relative Navigation System (RNS) during the Hubble Servicing Mission. RNS is an important navigational capability for future science and exploration efforts. He received Goddard R&D funding to advance the technology, which is pictured here with Naasz inside the Shuttle cargo bay before launch.

Another Goddard scientist, who used IRAD funds to adapt his Cloud Physics Lidar for use on an unmanned aircraft, flew the instrument on the maiden flight of NASA's Global Hawk unmanned aircraft. Three other Goddard scientists completed their IRAD-developed heliophysics instruments and delivered them to the Marshall Space Flight Center for integration into a new NASA micro-satellite that will fly in mid-2010. The demonstration flight will advance their technology readiness levels, with the ultimate goal of flying the miniaturized instruments on a future heliophysics mission.

"These demonstrations and follow-on funding represent success by any measure," Hughes said. "As this year proved, our innovators are capturing new opportunities and driving discovery, which will assure the Center's long-term viability and enable the scientific community as a whole."

A downloadable copy of the Chief Technologist's annual report is available on <http://gsfctechnology.gsfc.nasa.gov>. ■

Make Innovation Your New Year's Resolution

By Lori Keesey

It's just a few weeks into the New Year. So what did you resolve to change in 2010? In addition to the perennial favorites of losing weight, paying off debt, and enjoying life more, the Goddard Office of the Chief Technologist is offering another resolution employees might consider: Becoming more innovative at work.

"Goddard needs to unleash the creativity and innovation of its highly skilled workforce to enhance the Center's competitiveness," said Chief Technologist Peter Hughes. "We hope to develop far-reaching mission and instrument concepts or the technologies needed for them. This way, we can assure meaningful work for our high-caliber workforce, while helping the Agency achieve scientific discovery in the future."

In 2010, his organization will be sponsoring several initiatives that will make it easier for employees to connect, innovate, and share their ideas.

On March 17, the Office of the Chief Technologist will pilot a meeting format called "Open Space 2 Innovate." At this session, Goddard employees can come together and talk about innovative ideas across grade level, skill, function, discipline, tenure, expertise, and the Goddard lines of business. This facilitated forum responds to needs expressed by Goddard employees who said they wanted more opportunities to come together, connect, and innovate to develop technical and business solutions. Mark your calendar and stay tuned to Dateline and InsideGoddard for session times.

Connect and Innovate to Continue

Chief Technologist Peter Hughes, also plans to continue a spontaneous R&D investment program that he rolled out in 2009 as part of the Center's Internal Research and Development (IRAD) program, which offers seed funding to promising technologies that could help the Center win new mission or instrument opportunities. Unlike the traditional IRAD call for proposals, however, *Connect & Innovate* specifically encourages employees to form unique, atypical partnerships across science or technical disciplines.

In 2009, Hughes offered two opportunities for technologists to connect and innovate, resulting in three awards that were made within days of technologists submitting their proposals. In late December, Hughes announced that technologists Paul Racette, who works for Code 500's Microwave Instrument Technology Branch, and Haris Riris, who works for Code 600's Solar

Systems Exploration Division, were chosen to receive *Connect & Innovate* funding to investigate a new analytical method to calibrate laser remote-sensing instruments.

Also selected in late December was a proposal offered by Alvin Yew, Jason Dworkin, Jennifer Eigenbrode, Stephanie Getty, Daniel Glavin, and Natasha Johnson. The team will investigate a tool that would extract ice and icy regolith and convert the sample to liquid form while on an airless, icy surface. A liquid solution is needed to carry out in situ measurements of potential organic molecules. According to the team, currently no one is studying technologies that could accomplish this.

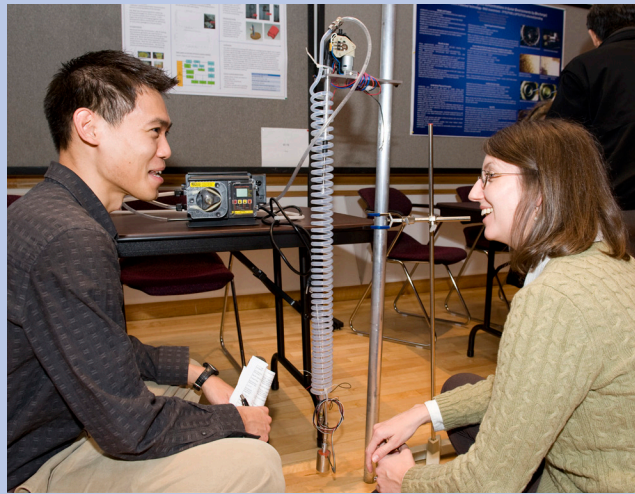


Photo credit: Bill Hrybyk

Caption: Technologist Alvin Yew talks with colleague Stephanie Getty about a prototype ice drill he developed with IRAD funds. The pair, along with other colleagues, ended up winning a "Connect & Innovate" spontaneous IRAD to apply Yew's technology to new applications. The Connect & Innovate program is designed to invigorate creativity and innovation among employees.

A few months earlier, the organization awarded a *Connect & Innovate* award to Brian Dennis and Keith Gendreau to demonstrate new capabilities for high angular resolution X-ray imaging that could be used for both heliophysics and astrophysics.

"These types of collaborations are exactly what we had intended for *Connect & Innovate*," Hughes said. "The program is bringing together experts who might not normally collaborate on important new technologies. We plan to offer additional opportunities in 2010 and hope that our open forums will encourage innovation and lead to ideas that benefit all employees." ■

NASA Goddard's New Building Achieves LEED Gold Status

By Rob Gutro and Natalie Pagano



What does it take to turn silver into gold? For NASA scientists, the answer is "two protons." For Manhattan Construction Company, however, it is creative building solutions that have resulted in the Exploration Sciences Building project becoming the first at NASA's Goddard Space Flight Center to receive LEED®

(Leadership in Energy and Environmental Design) Gold certification from the U.S. Green Building Council (USGBC).

At 200,000 square feet, the Exploration Sciences Building is the largest "green" building on Goddard's campus. The building includes space for administrative and research purposes, and contains nearly 60 laboratories that are used to study a variety of scientific fields including microwave, infrared, optical, ultraviolet, X-ray, gamma-ray, and cosmic ray astronomy and astrophysics.

In addition, the Solar System Exploration Division performs a variety of research pertaining to the composition, chemistry, and dynamics of planetary atmospheres; planetary and cometary magnetism and magnetospheres; planetary geology and geodynamics; planetary electrical processes; geodetic very-long baseline interferometry; astrobiology; and studies of the Moon, asteroids, and Earth as a planet.



Caption: The Exploration Sciences Building at twilight.

The NASA Project Manager, David Larsen, believes that, "The LEED Gold certification for the Exploration Sciences Building is a major accomplishment

for the Center. This was achieved through the successful partnership between EwingCole, Manhattan Construction Company, and the Center. Through the life of the project, the project team has worked hard towards building the most sustainable facility ever built at the Center. I am very proud of our achievement."

"Initially, the project was designed with a goal to achieve LEED Silver certification," said Sean Evans, Manhattan Construction Company LEED Representative. "As the project progressed we identified additional 'green' building opportunities that helped NASA exceed that goal and earn the higher LEED Gold certification.

"Every 'green' project presents unique challenges," explained Evans, "During construction, a hidden site condition revealed concrete that is not normally recyclable. It threatened to negate two points for waste management. Manhattan responded by bringing a concrete crusher onsite to turn this landfill concrete debris into RC-6 (RC-6 is recycled crushed concrete). The RC-6 was then used for the parking lot aggregate base."

The project also earned an additional LEED credit for "Exemplary Performance" in recognition for recycling of construction materials, said Evans.

The NASA Exploration Science Building was designed by EwingCole of Philadelphia. Construction began in June, 2007 and was completed in 29 months.

USGBC is the Nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. The LEED® Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution.

For information on the LEED Green Building Council, visit:
<http://www.usgbc.org>.

For more information on Manhattan Construction, visit:
www.manhattanconstruction.com.

For renderings of the building, visit EwingCole's Web site at:
<http://www.ewingcole.com>. ■

Image credit: Manhattan Construction Company

Exploration Sciences Building Construction Team Wins Center Director's Award

By Rob Gutro

The Exploration Sciences Building (ESB) project construction team received an award from NASA Goddard for their work on Goddard's new Exploration Sciences Building (ESB). The construction team is composed of multiple Directorates and three major contractors.

The team for the project included a core Code 600 representative team, the design team of Ewing Cole, the construction team of Manhattan Construction, the quality assurance team of Crawford Consulting, LLC, the Institutional Procurement Division (Code 210), the project and technical management team of the Facilities Management Division (Code 220), and the former Code 250 Safety and Environmental Division.

The award recognizes cross-Directorate teams who have significantly contributed to the accomplishment of a Goddard or NASA objective. The award provides the opportunity for teams to compete for recognition by the Center Director.

The construction of the ESB is the culmination of an idea that was formulated nearly 10 years ago between Code 600, Center Management, and the Science Mission Directorate (SMD) at NASA Headquarters.

The new 200,000 square foot ESB was designed by EwingCole to achieve a Leadership in Energy and Environmental Design (LEED) gold rating. LEED-certified buildings use less energy and save money for businesses and taxpayers; reduce greenhouse gas emissions; and contribute to a healthier environment for residents, workers, and the larger community.

Some features that contributed to the LEED gold certification include lighting designed to reduce light pollution, plumbing fixtures to reduce water usage, no chlorofluorocarbons or ozone depleting hydrochlorofluorocarbons/halons in the building, reduced energy usage, a proactive storm water management system, and recyclables areas.

The entire project team worked closely with various support organizations across the Center including Safety, Environmental, Code 500 Contamina-

tion Control, Logistics, ESB Outfitting Team, Center Management, NASA Headquarters, and various outside regulatory groups including Maryland Department of the Environment, U.S. Green Building Council, Maryland Department of Natural Resources, and Prince Georges County Government.

"Each one of these vital partnerships has created a consolidated team that worked beyond lines and focused on delivering a product that will serve the Center for 50 years," said David Larsen, ESB Project Manager at Goddard. "The communication, trust, and friendship between all parties have created a strong and dynamic relationship that is well deserving of a Center Director's Team Recognition Award," Larsen said.



Photo credit: Pat Izzo

Caption: Representative Steny Hoyer addresses Goddard employees at the ribbon cutting for the Exploration Sciences Building.

A ribbon cutting ceremony was held at the building, also known as Building 34, on September 28. NASA employees listened to remarks from Goddard Center Director Rob Strain and U.S. House Majority Leader Steny Hoyer.

By December 2009, most of the tenants have already settled into their new home in Goddard's newest and greenest building.

For more information about the building's LEED features, read the October 2009 issue of *Goddard View*. For more information about the LEED certification process, visit: <http://www.usgbc.org>. ■

American Geophysical Union Selects Goddard Scientists to Become Fellows

By Ed Campion

The American Geophysical Union (AGU) announced earlier this month that they will once again award a handful of scientists at NASA's Goddard Space Flight Center with the honor of becoming AGU Fellows.

Paul Newman, Randal Koster, and Michael Hesse have been bestowed the prestigious honor for fostering their work in Earth and space science. Only one in 1,000 members of the scientific community is elected as Fellows each year.

AGU is dedicated to the promotion and research of Earth and space science from scientists within and outside membership. As an international organization, their mission lies solely in ensuring communication of scientific knowledge pertaining to Earth and space science in order to benefit humanity. Newly elected Fellows are chosen by a Committee of Fellows. In order to become a Fellow, a member must display exceptional contributions to the advancement of geophysical sciences for the public's understanding and service of their community. They must also have attained acknowledged eminence in the Earth and space sciences.



Dr. Paul Newman is an atmospheric physicist in the Atmospheric Chemistry and Dynamics Branch at Goddard. He was awarded with the honor of becoming a Fellow for his long-term contributions to atmospheric science. Although his main involvement is in the analysis of stratospheric meteorological and trace gas observations, he was nominated based upon his "careers worth of work," which includes Goddard's effort to analyze data collected from NASA aircraft that are the primary sources of high resolution information about the stratosphere. He now resides in Bowie, Md. and dabbles in archaeology in his free time.

"I am really honored and grateful to have been made an AGU Fellow. My work is a result of the education from my teachers; the love of my parents, siblings, children, and wife; and the help and wisdom of my science colleagues," Newman said about his award. "The honor is theirs more than mine."

Michael Hesse, who holds a doctorate in theoretical physics, is the Chief of the Space Weather Laboratory at Goddard. He has been elected an AGU Fellow for his long-term contribution to Earth and space science, specifically magnetospheric physics. Currently, Hesse is "heavily engaged in space weather modeling and research." He is also involved in researching magnetic reconnection processes. Hesse, who lives in Annapolis, Md., is an avid sailor, primarily on the Chesapeake Bay.

"It is a great and wonderful surprise," Hesse said about being elected. "To be selected means to me that my work is appreciated by my colleagues in the scientific community. This is very important to me."

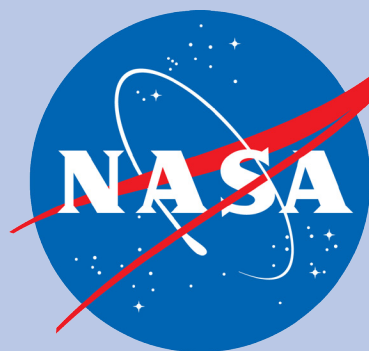
Dr. Randal Koster, who said he has a great respect for the organization, has been a member of AGU for almost 30 years. His long-term research in hydrological modeling has resulted in his AGU Fellow nomination. He is a researcher and Senior Scientist in the Global Modeling and Assimilation Office (GMAO) at Goddard. Dr. Koster leads the development and maintenance of the land surface model component of GMAO's Earth system model. He was formally a lecturer for the climate program at George Mason University and has extensive knowledge in land modeling and seasonal predictions.

Koster resides in Dayton, Md. When he is not researching hydrological modeling he is an unpublished hack writer of B-grade mystery novels. "This honor came out of the blue and I am surprised, honored, humbled and somewhat speechless," Koster said.

For more information about the American Geophysical Union, visit: <http://www.agu.org>. ■

Goddard Employees Among 2009 Presidential Rank Awardees

By Susan Hendrix



Each year, the president recognizes and celebrates a small group of career senior executives and senior career personnel with the Presidential Rank Award. It is presented to a select group of leaders, professionals,

and scientists who have achieved results and consistently demonstrated strength, integrity, diligence, and a relentless commitment to excellence in public service.

Four Goddard employees are among those selected to receive this prestigious award for 2009. Here are the awardees along with a brief summary of their accomplishments:

John H. Campbell is the Distinguished Senior Executive Service Award recipient. Prior to his retirement last year, he served as Director of Goddard's Wallops Flight Facility and the Director of Suborbital and Special Suborbital Projects. Campbell successfully managed the Center's sounding rockets, balloon, aircraft and launch range programs. From 2000–2002, Campbell served as the Director of Flight Programs and Projects, responsible for the development and operation of all of Goddard's spacecraft, including the Hubble Space Telescope and National Oceanographic and Atmospheric Administration (NOAA) polar and geosynchronous weather satellites. He was a member of the Senior Executive Service for 17 years and was awarded 16 consecutive "Outstanding" ratings.

Samuel H. Moseley is the Distinguished Scientific and Technical Award recipient. He serves as either Principal Investigator or Co-Investigator on several Goddard missions and instruments, including the James Webb Space Telescope, planned for launch in 2014. He is a member of the Advanced Dark Energy Telescope study to define a mission to characterize dark energy in the universe, and was selected as a member of the Science Definition Team, which is establishing the requirements for a dark energy research mission. Moseley has received numerous awards and medals during his NASA career for his contributions to advanced science including Goddard's highest scientific honor, the John C. Lindsay Memorial Award.

The Meritorious Scientific and Technical Award went posthumously to Mario H. Acuña. During his prestigious 40-year Goddard career, Acuña's primary field of research focused on experimental investigations of the magnetic fields and plasmas in the solar system. The Spanish-speaking media regularly consulted him on matters related to space research and technology. Over the years, NASA honored Acuña with numerous awards, including Goddard's John C. Lindsay Memorial Award for science, the Moe I. Schneebaum Memorial Award for engineering, the NASA Medal for Exceptional Scientific Achievement, and NASA's highest honor—the Distinguished Service Medal.

"Mario's passing was a great loss to us all," said Goddard Center Director Rob Strain. "He was one of the best known and well liked people working at Goddard, and I am very grateful for this posthumous recognition of his lifetime of achievement."

David M. Scheve, who serves as the Deputy Director of the Flight Projects Directorate at Goddard, is the Meritorious Senior Executive Service Award recipient. He is responsible for executing nearly 40 spaceflight projects either in formulation, implementation, or operation. Scheve oversees cutting-edge projects that include the James Webb Space Telescope, the Lunar Reconnaissance Orbiter, and the Earth Observing System Data Information System. Scheve also oversees the NASA/NOAA series of weather satellites. During his 18-year NASA career, Scheve has been presented with the NASA Exceptional Achievement Medal, 10 Group Achievement Awards, several Special Act Awards, and more than 10 Outstanding Performance Awards.

"All of us here are extremely proud of the four dedicated individuals for winning this prestigious award," said Strain. "It shows the very high level of achievement we see in the talented people working on the Nation's space program at Goddard and our Wallops Flight Facility, and we thank them for the contributions they make every day to ensuring a bright future for America."

Those selected will be honored at the Presidential Rank Awards banquet and symposium on April 23 and 24 respectively. ■

Goddard Employees Receive Medal for Saving Langley Colleague

By Jim Hodges

NASA Deputy Administrator Lori Garver awarded Exceptional Bravery Medals to Jeff Stewart, Composite Crew Module Deputy Project Manager, and Perry Wagner, a structural analyst, both from Goddard, Chip McCann of Johnson Space Center, and Mike Kirsch of Langley Research Center.

Garver reminded everyone at the award ceremony that NASA's products were produced by NASA's people. "I am just so thrilled that you all were there," she told the foursome getting the awards.

Another at the ceremony told the gathering NASA's Langley Research Center that he had already gotten his award. "Thanks guys," said Paul Roberts, looking at his NASA coworkers, "for giving me back my life."

During a November 4 meeting in Langley's Building 1256, where the team was getting ready for a module test, "We were sitting back, looking at data, and suddenly he (Roberts) had his head back against the wall and it sounded like he was snoring," Perry Wagner remembered. "We started kidding him that it looked like the meeting was boring him, but he didn't respond."

Jeff Stewart shook Roberts and, finding no response, laid him on the floor. Wagner, Stewart, and Chip McCann immediately began administering CPR, as best they could remember how.

"I think I'd had the training most recently," McCann said, "and that was about six years ago."

Wagner said, "I remember, like all of us, that we breathed on a mannequin in grade school. That was the last time I had CPR training."

Stewart was more specific about his training, "About 34 years ago, when I was in the Boy Scouts."

But each took a role: Stewart working on Roberts' chest, Wagner doing mouth-to-mouth resuscitation when Roberts began to lose color, and McCann monitoring Roberts for a pulse rate.

"As soon as we put him down and tried to find a pulse on his wrist—and actually I thought I felt a faint pulse there—Jeff put his hand on Paul's chest and said 'I don't feel his heart beating here,'" McCann said. "By then, I didn't feel anything on his wrist, and that was the time Jeff started doing compressions. It was a struggle for all of us. We were trying to do the basics."

Mike Kirsch was organizing everyone else, creating an impromptu emergency center, calling 911, getting furniture out of the way for the arrival of paramedics, and trying to reach NASA Engineering and Safety Center Director Ralph Roe in an effort to find the phone number for Roberts' wife. Stewart remembered an e-mail from his father-in-law a week earlier advising that the old "five compressions" method of CPR had been superseded by a recommended "30 compressions."

Wagner asked Stewart whether or not he should begin mouth-to-mouth resuscitation, and Stewart said okay. "As soon as I started mouth-to-mouth," Wagner said, "I could tell his (Roberts) color was getting better."

Stewart said, "Two to three minutes after we started to work on him, it looked like he was trying to come around."

Within 10 minutes, emergency personnel arrived to take over. They told Stewart to continue chest compression. Stewart explained, "The first thing they said was 'Are you tired? Can you keep going?'"

Then the paramedics used a defibrillator to shock Roberts' heart. "By the way, that wasn't much fun," said Roberts, laughing. One shock brought him back.

"Then Paul started talking," Stewart said. "He said 'Why am I on the floor? What happened?'"

Stewart filled him in on the ambulance ride to a local hospital. The diagnosis was that Roberts had not had a heart attack, but that his electrical system had shut down. Without the CPR administered by his co-workers, Roberts probably would have died.

"Let me give you an idea of how important what these guys did was," Roberts said. "When I was in the hospital, I looked up some statistics on the Internet. When you go into sudden cardiac arrest and somebody in the room sees you go down, the percentages are about 4–7 percent that you survive."



Caption: Paul and Ellen Roberts (center) are flanked by award winners (left to right) Perry Wagner, Chip McCann, Mike Kirsch, and Jeff Stewart.

"About 30 percent of that 4–7 percent have almost no mental degradation. I think I'm in that 30 percent." He laughed with everyone around him.

For Roberts, though, it was all personal. "Guys, thanks for giving me back my family," he said.

All of the men who received the awards made early New Year's resolutions. "CPR training is on my list," Kirsch said. ■

Almost Fifteen Minutes: Shooting “Bang for Your Buck”

By Elizabeth M. Jarrell

In June 2008, Contracting Officer Jonathan Wingerberg and Craig Newcomb purchased a row house in Baltimore's Little Italy that was built in 1809. They knew they would have to do extensive renovations. Wingerberg explained that, “It was livable but in very, very poor condition. It was built before indoor plumbing and electric. The original kitchen would have been outside. When the indoor kitchen was made, it was put in the basement ‘London style.’”

Wingerberg and his partner designed and did all the work themselves for the renovation, which took an entire year. They moved the kitchen from the basement to the first floor, removed a large wall on the first floor, refinished the original floors, removed wallpaper everywhere and then painted, removed a drop ceiling and reconfigured the plumbing in the ceiling to raise the ceiling, exposed the brick on the inside walls, and turned the basement into a game room with a wet bar. All told, they spent \$25,000 on the renovation excluding the value of their own labor. In the process, his partner, amazingly enough, finished his MBA.

As the renovation was winding down, Wingerberg saw an advertisement posted by Home and Garden Television (HGTV) looking for recently renovated row houses in Baltimore City. Specifically, HGTV's 30 minute show “Bang for Your Buck” was looking for three row houses to see who got the most value for the money spent on renovating the great room meaning the living room, kitchen, and dining room area. The episode was to be called “Three Great Rooms with Different Styles in Baltimore.”

They submitted an application with before and after pictures. Several telephone interviews later, they were selected as one of the three featured row houses out of hundreds of applicants. Although Wingerberg and his partner only spent \$25,000, which included the entire house not just the great room, the show factored in their labor as an additional \$25,000 so that each contestant was deemed to have spent \$50,000 on their renovations.

Filming began in early July of 2009 and took two days. According to Wingerberg, “When you're preparing your house for a professional film crew to come in, you want everything to be spic and span. Plus, we had to finish all those little jobs before they filmed.”

The first day, the producer arrived with a two-member camera crew. Wingerberg and Newcomb were asked to give a verbal tour of their house. Basically, the producer asked leading questions and told them to repeat his question in their answer. “It's tough to sound eloquent and descriptive when there's a big light and a camera a foot away from your face,” admits Wingerberg. The producer also instructed them not to look at the camera, but to look instead at the producer standing next to the camera man. They were also asked not to wear black, white, or patterns.



Photo credit: Jonathan Wingerberg

Caption: The camera crew invades.

The second day, the producer arrived with a camera crew of about fifteen. He then asked the owners to leave while Taniya Nayak, a nationally known home designer who has been featured on “The Oprah Winfrey Show,” accompanied by a local real estate agent, were filmed critiquing the layout, function, design, and finishes of their new great room. After about half a day, the producer returned Wingerberg and Newcomb to their house, showed them footage of the critique, and then filmed their reactions.

This process proved to be challenging. “It's easy to get defensive because they don't say anything good. They want you to be as reactive as you possibly can to give some attitude. We gave them witty comebacks. We were not rude to them. It was a very fun type of interaction. Luckily they didn't comment on our dogs,” said Wingerberg. They were also filmed in some lifestyle shots, which Wingerberg explained means “showing how you actually use the space.”

The episode aired Sept. 11, 2009. Wingerberg and Newcomb held a viewing party for about 75 people. They did not even know if they had won and, as it turned out, they had not. Wingerberg said, however, “Everybody at the party thought we should have won but there is no prize anyway, and all contestants received a \$100 gift card.” All told, Wingerberg and Newcomb had about 10 minutes of actual airtime given that they were only one of three owners featured in a 30 minute show. When asked if he would do it all again, Wingerberg smiled and said, “Absolutely!”

Additional airings of this episode may be found at: <http://www.hgtv.com/bang>. Also, Wingerberg's blog detailing the renovation process with text and photos is located at: <http://projectrowhouse.blogspot.com>. ■

Goddard's Drake Deming Wins Astrophysics Award

By Nancy Neal-Jones and Liz Zubritsky



Caption: Drake Deming.

Drake Deming, Senior Scientist in the Solar System Exploration Division of Goddard Space Flight Center, was awarded the prestigious Beatrice M. Tinsley Prize at the American Astronomical Society meeting in Washington last week.

The American Astronomical Society voted the award to Deming for his innovative and pioneering work detecting thermal infrared emission from transiting extrasolar planets using the *Spitzer Space Telescope*. The Tinsley Prize is awarded every other year by the American Astronomical Society in recognition of an outstanding research contribution to astronomy or astrophysics of an exceptionally creative or innovative character. The prize is named in honor of the late cosmologist and astronomer Beatrice M. Tinsley.

Drake is a planetary scientist and infrared astronomer at Goddard. His research has focused on infrared observations of stellar and planetary atmospheres, including planets in our solar system as well as planets orbiting other stars (extrasolar planets).

"This award reflects the work of my colleagues as much as it does my own role," said Deming, referring to the large technological and scientific effort needed to discover and verify transiting extrasolar planets, as well as the extensive work needed to design, construct, launch, and operate NASA's *Spitzer Space Telescope*. *Spitzer* is one of NASA's Great Observatories and is currently in an extended mission phase, following the completion of its prime mission in 2009.

Deming earned a bachelor's degree in mathematics from the University of Chicago in 1970 and his doctorate in astronomy from the University of Illinois at Champaign-Urbana in 1976. He spent four years teaching astronomy at the University of Maryland, College Park, before coming to Goddard in 1980. He was appointed Chief of Goddard's Planetary Systems Laboratory in 1991 and became Senior Scientist for Exoplanet Studies in 2008.

He is currently the Principal Investigator for the Extrasolar Planet Observation and Characterization (EPOCh) investigation on NASA's EPOXI mission. EPOXI is a combination of the names for the two extended mission components: the search for extrasolar planets during the cruise to Hartley 2, called EPOCH, and the flyby of comet Hartley 2, called the Deep Impact eXtended Investigation (DIXI).

Dr. L. Drake Deming lives in Bowie, Md., with his wife, Grace. When he's not working to investigate extrasolar planets, Deming is learning to play the 5-string banjo.

Nicholas E. White, Director of the Sciences and Exploration Directorate at NASA Goddard, said, "The prize is a well-deserved recognition of his work."

For more information on Drake Deming, visit:

<http://ssed.gsfc.nasa.gov/code693/vitae/drakedeming.html>. ■